

109TH CONGRESS
2D SESSION

H. R. 5927

To provide energy independence to Americans, to increase the efficiency and decrease the environmental impact of America's energy policy, to increase America's research and development in energy, and to encourage the development and use of renewable forms of energy.

IN THE HOUSE OF REPRESENTATIVES

JULY 27, 2006

Mr. CARDIN introduced the following bill; which was referred to the Committee on Energy and Commerce, and in addition to the Committees on Ways and Means, Transportation and Infrastructure, Government Reform, and Science, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

A BILL

To provide energy independence to Americans, to increase the efficiency and decrease the environmental impact of America's energy policy, to increase America's research and development in energy, and to encourage the development and use of renewable forms of energy.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

4 (a) SHORT TITLE.—This Act may be cited as the
5 “American Energy Independence Act”.

- 1 (b) TABLE OF CONTENTS.—The table of contents for
 2 this Act is as follows:

Sec. 1. Short title; table of contents.

TITLE I—AN ENERGY PLAN THAT CHANGES WITH INNOVATIONS

Sec. 101. Purpose and goals.

Sec. 102. Energy Policy Commission.

TITLE II—INCREASING EFFICIENCY FOR AMERICAN CONSUMERS

Sec. 201. Automobile average fuel economy standards.

Sec. 202. Energy Star program funding.

Sec. 203. Energy Star certification for solar water heaters.

Sec. 204. Fuel efficiency standards for replacement tires.

Sec. 205. Appliance standards.

Sec. 206. Increase in energy efficient commercial buildings deduction.

TITLE III—ENCOURAGING THE DEVELOPMENT AND AVAILABILITY OF RENEWABLE ENERGY

Sec. 301. Federal renewable portfolio standard.

Sec. 302. Electricity transmission lines designed to carry electricity from renewable energy resources.

Sec. 303. Extension through 2017 for placing qualified facilities in service for producing renewable electric energy.

Sec. 304. Net metering.

Sec. 305. Loan guarantees for biorefineries and renewable energy production facilities.

TITLE IV—INCREASING THE RENEWABLE ENERGY USE AND ENERGY EFFICIENCY OF THE FEDERAL GOVERNMENT

Sec. 401. Federal energy efficiency.

Sec. 402. Green building standards for Federal buildings.

Sec. 403. Federal renewable and clean energy use.

Sec. 404. Fuel economy of the Federal fleet of vehicles.

Sec. 405. Federal vehicle efficiency requirement.

TITLE V—INCREASING AMERICAN ENERGY RESEARCH AND DEVELOPMENT

Sec. 501. Authorization of appropriations for the Department of Energy for basic research.

Sec. 502. Mathematics, Science, and Engineering Education at the Department of Energy.

Sec. 503. Department of Energy early career research grants.

Sec. 504. Advanced Research Projects Authority—Energy.

TITLE VI—INCREASING FEDERAL PUBLIC TRANSIT FUNDING AND EFFICIENCY INCENTIVES

Sec. 601. Transit-oriented development corridors.

Sec. 602. Weatherization assistance.

Sec. 603. Federal support for commercialization of new technologies.

Sec. 604. Telecommuting tax credit.

1 **TITLE I—AN ENERGY PLAN THAT**
2 **CHANGES WITH INNOVATIONS**

3 **SEC. 101. PURPOSE AND GOALS.**

4 It is the purpose of this Act to facilitate the achieve-
5 ment of the following 2 Congressional goals:

6 (1) ACHIEVING ENERGY INDEPENDENCE BY
7 2016.—Meeting all but 10 percent of the United
8 States energy needs from domestic energy sources
9 by 2016.

10 (2) ACHIEVING FOSSIL FUEL INDEPENDENCE
11 BY 2026.—Meeting all but 20 percent of the United
12 States energy needs from non-fossil fuel sources by
13 2026.

14 **SEC. 102. ENERGY POLICY COMMISSION.**

15 (a) ESTABLISHMENT.—There is established a com-
16 mission to be known as the “National Commission on En-
17 ergy Independence” (in this section referred to as the
18 “Commission”).

19 (b) PURPOSE.—The Commission shall conduct a
20 comprehensive review of United States energy policy for
21 the following purposes:

22 (1) REVIEW.—Reviewing relevant analyses of
23 the current and long-term energy policy and condi-
24 tions in the United States.

1 (2) IDENTIFYING PROBLEMS.—Identifying
2 problems that may threaten the long-term energy
3 policy goals of independence.

4 (3) ANALYZING POTENTIAL SOLUTIONS.—Ana-
5 lyzing potential solutions to problems that threaten
6 the long-term ability to achieve these energy policy
7 goals.

8 (4) PROVIDING RECOMMENDATIONS.—Providing
9 recommendations that will ensure that the United
10 States energy policy goals are met.

11 (c) REPORT AND RECOMMENDATIONS.—

12 (1) IN GENERAL.—Not later than December 31
13 of 2008, 2010, 2012, and 2014, the Commission
14 shall transmit to the President and Congress a re-
15 port on the progress of United States energy policy
16 towards meeting its long-term goals of energy inde-
17 pendence, including a detailed statement of the find-
18 ings, conclusions, and recommendations of the Com-
19 mission.

20 (2) LEGISLATIVE LANGUAGE.—If a rec-
21 ommendation submitted under paragraph (1) in-
22 volves legislative action, the report shall include pro-
23 posed legislative language to carry out such action.

24 (d) MEMBERSHIP.—The Commission shall be com-
25 posed of 15 members of whom—

1 (1) 3 shall be appointed by the President;

2 (2) 3 shall be appointed by the majority leader
3 of the Senate;

4 (3) 3 shall be appointed by the minority leader
5 of the Senate;

6 (4) 3 shall be appointed by the Speaker of the
7 House of Representatives; and

8 (5) 3 shall be appointed by the minority leader
9 of the House of Representatives.

10 (e) CO-CHAIRPERSONS.—The President shall des-
11 ignate 2 Co-chairpersons from among the members of the
12 Commission appointed, who shall not both be affiliated
13 with the same political party.

14 (f) DATE.—Members of the Commission shall be ap-
15 pointed by not later than 90 days after the date of enact-
16 ment of this Act.

17 (g) PERIOD OF APPOINTMENT.—Members shall be
18 appointed for the life of the Commission. Any vacancy in
19 the Commission shall not affect its powers, but shall be
20 filled in the same manner as the original appointment.

21 (h) STAFF.—

22 (1) DIRECTOR.—The Commission shall have a
23 staff headed by an Executive Director.

24 (2) STAFF APPOINTMENT.—The Executive Di-
25 rector may appoint such personnel as the Executive

1 Director and the Commission determine to be appro-
2 priate.

3 (3) EXPERTS AND CONSULTANTS.—With the
4 approval of the Commission, the Executive Director
5 may procure temporary and intermittent services
6 under section 3109(b) of title 5, United States Code.

7 (4) FEDERAL AGENCIES.—

8 (A) DETAIL OF GOVERNMENT EMPLOY-
9 EES.—Upon the request of the Commission, the
10 head of any Federal agency may detail, without
11 reimbursement, any of the personnel of such
12 agency to the Commission to assist in carrying
13 out the duties of the Commission. Any such de-
14 tail shall not interrupt or otherwise affect the
15 civil service status or privileges of the Federal
16 employee.

17 (B) TECHNICAL ASSISTANCE.—Upon the
18 request of the Commission, the head of a Fed-
19 eral agency shall provide such technical assist-
20 ance to the Commission as the Commission de-
21 termines to be necessary to carry out its duties.

22 (5) RESOURCES.—The Commission shall have
23 reasonable access to materials, resources, statistical
24 data, and other information the Commission deter-
25 mines to be necessary to carry out its duties from

1 all relevant Executive Agencies. The Co-Chair-
2 persons shall make requests for such access in writ-
3 ing when necessary.

4 **TITLE II—INCREASING EFFI-**
5 **CENCY FOR AMERICAN CON-**
6 **SUMERS**

7 **SEC. 201. AUTOMOBILE AVERAGE FUEL ECONOMY STAND-**
8 **ARDS.**

9 (a) PHASED INCREASES IN FUEL ECONOMY STAND-
10 ARDS.—

11 (1) PASSENGER AUTOMOBILES.—

12 (A) MINIMUM STANDARDS.—Section
13 32902(b) of title 49, United States Code, is
14 amended to read as follows:

15 “(b) PASSENGER AUTOMOBILES.—Except as other-
16 wise provided under this section, the average fuel economy
17 standard for passenger automobiles manufactured by a
18 manufacturer in a model year—

19 “(1) after model year 1984 and before model
20 year 2009 shall be 25 miles per gallon;

21 “(2) after model year 2008 and before model
22 year 2012 shall be 30 miles per gallon;

23 “(3) after model year 2011 and before model
24 year 2015 shall be 35 miles per gallon;

1 “(4) after model year 2014 and before model
2 year 2017 shall be 40 miles per gallon; and

3 “(5) after model year 2016 shall be 45 miles
4 per gallon.”.

5 (B) HIGHER STANDARDS BY REGULA-
6 TION.—Section 32902(c) of title 49, United
7 States Code, is amended—

8 (i) in paragraph (1)—

9 (I) by striking “Subject to para-
10 graph (2) of this subsection, the” and
11 inserting “The”;

12 (II) striking “amending the
13 standard” and inserting “increasing
14 the standard otherwise applicable”;
15 and

16 (III) by striking “Section 553 of
17 title 5 applies to” and inserting the
18 following:

19 “(2) Section 553 of title 5 applies to”; and

20 (ii) by striking paragraph (2).

21 (b) INCREASED INCLUSIVENESS OF DEFINITIONS OF
22 AUTOMOBILE AND PASSENGER AUTOMOBILE.—

23 (1) AUTOMOBILE.—

24 (A) IN GENERAL.—Section 32901(a)(3) of
25 title 49, United States Code, is amended—

1 (i) by striking “6,000 pounds” each
2 place it appears and inserting “12,000
3 pounds”; and

4 (ii) in subparagraph (B)—

5 (I) by striking “10,000 pounds”
6 and inserting “14,000 pounds”; and

7 (II) in clause (ii), by striking “an
8 average fuel economy standard” and
9 all that follows through “conservation
10 or”.

11 (B) SPECIAL RULE.—Section 32908(a)(1)
12 of such title is amended by striking “8,500
13 pounds” and inserting “14,000 pounds”.

14 (2) PASSENGER AUTOMOBILE.—Section
15 32901(a)(16) of title 49, United States Code, is
16 amended to read as follows:

17 “(16) ‘passenger automobile’ means an auto-
18 mobile having a gross vehicle weight of 10,000
19 pounds or less that is designed to be used principally
20 for the transportation of persons;”.

21 (c) CIVIL PENALTIES.—

22 (1) INCREASED PENALTY FOR VIOLATIONS OF
23 FUEL ECONOMY STANDARDS.—Section 32912(b) of
24 title 49, United States Code, is amended—

1 (A) by inserting “(1)” before “Except as
2 provided”;

3 (B) by striking “\$5” and inserting “the
4 dollar amount applicable under paragraph (2)”;

5 (C) by redesignating paragraphs (1), (2),
6 and (3) as subparagraphs (A), (B), and (C), re-
7 spectively; and

8 (D) by adding at the end the following:

9 “(2)(A) The dollar amount referred to in para-
10 graph (1) is \$10, as increased pursuant subpara-
11 graph (B);

12 “(B) Effective on October 1 of each year, the
13 dollar amount applicable under subparagraph (A)
14 shall be increased by the percentage (rounded to the
15 nearest $\frac{1}{10}$ of 1 percent) by which the Consumer
16 Price Index for all-urban consumers (published by
17 the Department of Labor) for July of such year ex-
18 ceeds such price index for July of the preceding
19 year. The amount calculated under the preceding
20 sentence shall be rounded to the nearest \$0.10.”.

21 (2) CONFORMING AMENDMENT.—Section
22 32912(c)(1) of title 49, United States Code, is
23 amended—

24 (A) by striking subparagraph (B); and

1 (B) by redesignating subparagraphs (C)
2 and (D) as subparagraphs (B) and (C), respec-
3 tively.

4 (3) APPLICABILITY.—The amendments made
5 by this section shall apply with respect to auto-
6 mobiles manufactured for model years beginning
7 after the date of enactment of this Act.

8 **SEC. 202. ENERGY STAR PROGRAM FUNDING.**

9 There are authorized to be appropriated for carrying
10 out the Energy Star program under section 324A of the
11 Energy Policy and Conservation Act—

12 (1) to the Administrator of the Environmental
13 Protection Agency \$100,000,000 for each fiscal
14 year; and

15 (2) to the Secretary of Energy \$12,000,000 for
16 each fiscal year.

17 **SEC. 203. ENERGY STAR CERTIFICATION FOR SOLAR**
18 **WATER HEATERS.**

19 Not later than January 1, 2008, the Secretary of En-
20 ergy, in consultation with the Administrator of the Envi-
21 ronmental Protection Agency, shall adopt regulations es-
22 tablishing Energy Star Program requirements and an En-
23 ergy Star rating program for commercial and residential
24 solar water heating devices.

1 **SEC. 204. FUEL EFFICIENCY STANDARDS FOR REPLACE-**
2 **MENT TIRES.**

3 (a) STANDARDS FOR TIRES MANUFACTURED FOR
4 INTERSTATE COMMERCE.—Section 30123 of title 49,
5 United States Code, is amended—

6 (1) in subsection (b), by inserting after the first
7 sentence the following: “The grading system shall
8 include standards for rating the fuel efficiency of
9 tires designed for use on automobiles subject to the
10 automobile fuel economy standards under chapter
11 329”; and

12 (2) by adding at the end of the following:

13 “(d) NATIONAL TIRE FUEL EFFICIENCY PRO-
14 GRAM.—

15 “(1) The secretary shall develop and carry out
16 a national tire efficiency program for tires designed
17 for use on passenger cars and light trucks. such pro-
18 gram shall include—

19 “(A) policies and procedures for testing
20 and labeling tires for fuel economy to enable
21 tire buyers to make informed purchasing deci-
22 sions about the fuel economy of tires;

23 “(B) policies and procedures to promote
24 the purchase of energy-efficient replacement
25 tires, including purchase incentives, website list-
26 ings on the Internet, printed fuel economy

1 guide booklets, and mandatory requirements for
2 tire retailers to provide tire buyers with fuel-ef-
3 ficiency information on tires; and

4 “(C) minimum fuel economy standards for
5 tires, promulgated by the Secretary.

6 “(2) The minimum fuel economy standards for
7 tires shall—

8 “(A) ensure that, in conjunction with the
9 requirements of paragraph (1)(B), the average
10 fuel economy of replacement tires is equal to or
11 better than the average fuel economy of tires
12 sold as original equipment;

13 “(B) secure the maximum technically fea-
14 sible and cost-effective fuel savings; and

15 “(C) not adversely affect tire safety;

16 “(D) not adversely affect the average tire
17 life of replacement tires;

18 “(E) Incorporate the results from—

19 “(i) laboratory testing; and

20 “(ii) to the extent appropriate and
21 available, on-road fleet testing programs
22 conducted by manufacturers; and

23 “(F) not adversely affect efforts to manage
24 scrap tires.

1 “(3) The policies, procedures, and standards
2 developed under paragraph (1) shall apply to all tire
3 types and models that are covered by the Uniform
4 Tire Quality Grading Standards in section 575.104
5 of title 49, Code of Federal Regulations (or any suc-
6 cessor regulation).

7 “(4) Not less than every 3 years, the Secretary
8 shall review the minimum fuel economy standards in
9 effect for tires under this subsection and revise the
10 standards as necessary to ensure compliance with re-
11 quirements under paragraph (2). The Secretary may
12 not reduce the average fuel economy standards ap-
13 plicable to replacement tires.

14 “(5) Nothing in this section shall be construed
15 to preempt any provisions of state law relating to
16 higher fuel economy standards applicable to replace-
17 ment tires designed for use on passenger cars and
18 light trucks. nothing in this chapter shall apply to—

19 “(A) a tire or group of tires with the same
20 product identification number, plant, and year,
21 for which the volume of tires produced or im-
22 ported is less than 15,000 annually;

23 “(B) a deep tread, winter-type snow tire,
24 space-saver tire, or temporary use spare tire;

1 “(C) a tire with a normal rim diameter of
2 12 inches or less;

3 “(D) a motorcycle tire; or

4 “(E) a tire manufactured specifically for
5 use in an off-road motorized recreational vehi-
6 cle.

7 “(6) In this subsection, the term ‘fuel economy’,
8 with respect to tires, means the extent to which the
9 tire contribute to the fuel economy of the motor ve-
10 hicles on which the tire are mounted.”.

11 (b) CONFORMING AMENDMENT.—Section
12 30103(b)(1) of title 49, United States Code, is amended
13 by striking “When” and inserting “Except as provided in
14 section 30123(d) of this title, when”.

15 (c) IMPLEMENTATION.—The Secretary of Transpor-
16 tation shall ensure that the national tire fuel efficiency
17 program required under subsection (d) of section 30123
18 of title 49, United States Code, (as added by subsection
19 (a)(2)), is administered so as to apply the policies, proce-
20 dures, and standards developed under paragraph (1) of
21 such subsection beginning not later than March 31, 2008.

22 **SEC. 205. APPLIANCE STANDARDS.**

23 (a) STANDARDS FOR HOUSEHOLD APPLIANCES IN
24 STANDBY MODE.—Section 325 of the Energy Policy and

1 Conservation Act (42 U.S.C. 6295) is amended by adding
2 at the end the following:

3 “(hh) STANDBY MODE ELECTRIC ENERGY CON-
4 SUMPTION BY HOUSEHOLD APPLIANCES.—

5 “(1) DEFINITION.—In this subsection, the term
6 ‘household appliance’ means any device that uses
7 household electric current and operates in a standby
8 mode except digital televisions, digital set top boxes,
9 and digital video recorders.

10 “(2) STANDARD.—

11 “(A) IN GENERAL.—Except as provided in
12 subparagraph (B), a household appliance that
13 is manufactured in, or imported for sale in, the
14 United States on or after the date that is 3
15 years after the date of enactment of this sub-
16 section shall not consume in standby mode
17 more than 1 watt.

18 “(B) ANALOG TELEVISIONS.—In the case
19 of analog televisions, the Secretary shall pre-
20 scribe, on or after the date that is 2 years after
21 the date of enactment of this subsection, in ac-
22 cordance with subsections (o) and (p), an en-
23 ergy conservation standard that is techno-
24 logically feasible and economically justified

1 under subsection (o)(2)(A) (in lieu of the 1
2 watt standard under subparagraph (A)).

3 “(3) EXEMPTIONS.—

4 “(A) APPLICATION.—A manufacturer or
5 importer of a household appliance or their des-
6 ignated agent may submit to the Secretary an
7 application for an exemption of a household ap-
8 pliance or class of appliances from the standard
9 under paragraph (2).

10 “(B) CRITERIA FOR EXEMPTION.—The
11 Secretary shall grant an exemption for a house-
12 hold appliance or class of appliances for which
13 an application is made under subparagraph (A)
14 if the applicant provides evidence showing that,
15 and the Secretary determines that—

16 “(i) it is not technically feasible to
17 modify the household appliance or appli-
18 ances concerned to enable them to meet
19 the standard;

20 “(ii) the standard is incompatible with
21 an energy efficiency standard applicable to
22 the household appliance or class of appli-
23 ances under another subsection; or

24 “(iii) the cost of electricity that a typ-
25 ical consumer would save in operating the

household appliance or class of appliances meeting the standard would not equal the increase in the price of the household appliance or class of appliances that would be attributable to the modifications that would be necessary to enable the household appliance or class of appliances to meet the standard by the earlier of—

“(I) the date that is 7 years after the date of purchase of the household appliance concerned; or

“(II) the end of the useful life of the household appliance.

“(C) DETERMINATION OF TECHNICAL INFEASIBILITY.—If the Secretary determines that it is not technically feasible to modify a household appliance or class of appliances to meet the standard under paragraph (2), the Secretary shall establish a different standard for the household appliance or class of appliances in accordance with the criteria under subsection (1).

“(4) TEST PROCEDURE.—

“(A) IN GENERAL.—Not later than 1 year after the date of enactment of this subsection,

1 the Secretary shall establish a test procedure
2 for determining the amount of consumption of
3 power by a household appliance operating in
4 standby mode.

5 “(B) CONSIDERATIONS.—In establishing
6 the test procedure, the Secretary shall con-
7 sider—

8 “(i) international test procedures
9 under development;

10 “(ii) test procedures used in connec-
11 tion with the Energy Star program; and

12 “(iii) test procedures used for meas-
13 uring power consumption in standby mode
14 in other countries.

15 “(5) FURTHER REDUCTION OF STANDBY
16 POWER CONSUMPTION.—The Secretary shall provide
17 technical assistance to manufacturers in achieving
18 further reductions in standby mode electric energy
19 consumption by household appliances.

20 “(ii) STANDBY MODE ELECTRIC ENERGY CONSUMP-
21 TION BY DIGITAL TELEVISIONS, DIGITAL SET TOP
22 BOXES, AND DIGITAL VIDEO RECORDERS.—The Sec-
23 retary shall initiate within 5 years of the date of enact-
24 ment of this subsection a rulemaking to prescribe, in ac-
25 cordance with subsections (o) and (p), an energy conserva-

1 tion standard of standby mode electric energy consump-
 2 tion by digital television sets, digital set top boxes, and
 3 digital video recorders. The Secretary shall issue a final
 4 rule prescribing such standards not later than 18 months
 5 thereafter. In determining whether a standard under this
 6 subsection is technologically feasible and economically jus-
 7 tified under subsection (o)(2)(A), the Secretary shall con-
 8 sider the potential negative effects on market penetration
 9 by digital products covered under this subsection, and
 10 shall consider any recommendations by the Federal Com-
 11 munications Commission regarding such effects.”.

12 (b) STANDARDS FOR NONCOVERED PRODUCTS.—

13 (1) Section 325(m) of the Energy Policy and
 14 Conservation Act (42 U.S.C. 6295(m)) is amended
 15 as follows:

16 (A) Inserting “(1)” before “After”.

17 (B) Inserting the following at the end:

18 “(2) Not later than one year after the date of enact-
 19 ment of this paragraph, and every 5 years thereafter, the
 20 Secretary shall conduct a rulemaking to determine wheth-
 21 er consumer or commercial products not classified as a
 22 covered product under section 322(a)(1) through (19)
 23 meet the criteria of section 322(b)(1). If the Secretary
 24 finds that a consumer or commercial product not classified
 25 as a covered product meets the criteria of section

1 322(b)(1), the Secretary shall prescribe, in accordance
2 with subsections (o) and (p), an energy conservation
3 standard for such consumer or commercial product.”.

4 (2) Part B of title III of such Act is amended
5 as follows:

6 (A) In the heading for such part by insert-
7 ing “**AND COMMERCIAL**” after “**CON-**
8 **SUMER**”.

9 (B) In section 321(2) by striking “con-
10 sumer product of a type specified in section
11 322” and inserting “consumer or commercial
12 product of a type specified in section 322(a)”.

13 (C) In paragraphs (4), (5), (7), (12), (13),
14 (14), (15), (32), and (36) of section 321 by
15 striking “consumer” in each place it appears
16 and inserting “covered”.

17 (D) In section 322(a) by inserting “or
18 commercial” after “consumer” the first place it
19 appears and in paragraph (19).

20 (E) In section 322(b), by inserting “or
21 commercial” after “consumer” in each place it
22 appears.

23 (F) In section 322(b)(1)(B) and (b)(2)(A),
24 by inserting “(or per-business in the case of a

1 commercial product)” after “per-household” in
 2 each place it appears.

3 (G) In section 322(b)(2)(A) by inserting
 4 “(or businesses in the case of commercial prod-
 5 ucts)” after “households” in each place it ap-
 6 pears.

7 (H) In section 322(b)(2)(C) by striking
 8 “term” and inserting “terms” and by inserting
 9 “and business” after “household”.

10 (I) In sections 323 through 325 (except in
 11 section 325(o)(2)(B)(iii), (q)(1), and
 12 (bb)(3)(B)), and in section 337(a)(3) and the
 13 last sentence of section 337(a), by inserting “or
 14 commercial” after “consumer” in each place it
 15 appears.

16 (c) EFFICIENCY STANDARDS FOR OTHER CONSUMER
 17 AND COMMERCIAL PRODUCTS.—

18 (1) DEFINITIONS.—Section 321 of the Energy
 19 Policy and Conservation Act (42 U.S.C. 6291) is
 20 amended by adding the following at the end thereof:

21 “(52) The term ‘residential furnace fan’ means
 22 an electric fan installed as part of a furnace for pur-
 23 poses of circulating air through the system air fil-
 24 ters, the heat exchangers or heating elements of the
 25 furnace, and the duct work.

1 “(53) The terms ‘residential central air condi-
2 tioner fan’ and ‘heat pump circulation fan’ mean an
3 electric fan installed as part of a central air condi-
4 tioner or heat pump for purposes of circulating air
5 through the system air filters, the heat exchangers
6 of the air conditioner or heat pump, and the duct
7 work.”.

8 (2) TESTING REQUIREMENTS.—Section 323 of
9 the Energy Policy and Conservation Act (42 U.S.C.
10 6293) is amended by adding the following at the end
11 thereof:

12 “(g) ADDITIONAL COVERED PRODUCTS.—The Sec-
13 retary shall within 18 months after the date of enactment
14 of this subsection prescribe testing requirements for the
15 consumer and commercial products referred to in para-
16 graphs (52) and (53) of section 321. Such testing require-
17 ments shall be based on existing test procedures used in
18 industry to the extent practical and reasonable. Such test
19 procedures shall include efficiency at both maximum out-
20 put and at an output no more than 50 percent of the max-
21 imum output.”.

22 (3) STANDARDS FOR ADDITIONAL COVERED
23 PRODUCTS.—Section 325 of the Energy Policy and
24 Conservation Act (42 U.S.C. 6295), as amended by

1 subsection (a) of this section, is amended by adding
2 the following at the end thereof:

3 “(jj) RESIDENTIAL FURNACE FANS AND CENTRAL
4 AIR CONDITIONER FANS.—(1) The Secretary shall, within
5 18 months after the date of enactment of this subsection,
6 assess the current and projected future market for the
7 products referred to in paragraphs (52) and (53) of sec-
8 tion 321. This assessment shall include an examination
9 of the types of these products sold, the number of these
10 products in use, annual sales of these products, energy
11 used by these products sold, estimates of the potential en-
12 ergy savings from specific technical improvements to these
13 products, and an examination of the cost-effectiveness of
14 these improvements. Prior to the end of this time period,
15 the Secretary shall hold an initial scoping workshop to dis-
16 cuss and receive input to plans for developing minimum
17 efficiency standards for these products.

18 “(2) The Secretary shall within 24 months after the
19 date on which testing requirements are prescribed by the
20 Secretary pursuant to section 323(g), prescribe, by rule,
21 energy conservation standards for residential furnace fans
22 and residential central air conditioner fans. In establishing
23 these standards, the Secretary shall use the criteria and
24 procedures contained in this section. Any standard pre-

1 scribed under this section shall apply to products manu-
2 factured 36 months after the date such rule is published.”.

3 (4) LABELING.—Section 324(a) of the Energy
4 Policy and Conservation Act (42 U.S.C. 6294(a)) is
5 amended by adding the following at the end thereof:

6 “(6) The Secretary shall within 6 months after
7 the date on which energy conservation standards are
8 prescribed by the Secretary, prescribe, by rule, label-
9 ing requirements for the consumer and commercial
10 products referred to in paragraphs (52) and (53) of
11 section 321. These requirements shall take effect on
12 the same date as the standards prescribed pursuant
13 to section 325(jj).”.

14 (5) COVERED PRODUCTS.—Section 322(a) of
15 the Energy Policy and Conservation Act (42 U.S.C.
16 6292(a)) is amended by redesignating paragraph
17 (19) as (20) and by inserting the following after
18 paragraph (18):

19 “(19) Beginning on the effective date for stand-
20 ards established pursuant to subsection (jj) of sec-
21 tion 325, each product referred to in such subsection
22 (jj).”.

1 **SEC. 206. INCREASE IN ENERGY EFFICIENT COMMERCIAL**
 2 **BUILDINGS DEDUCTION.**

3 (a) IN GENERAL.—Subsection (b)(1)(A) of section
 4 179D of the Internal Revenue Code of 1986 (relating to
 5 energy efficient commercial buildings deduction) is amend-
 6 ed by striking “\$1.80” and inserting “\$2.25”.

7 (b) EFFECTIVE DATE.—The amendments made by
 8 this section shall apply to property placed in service after
 9 the date of enactment of this Act, in taxable years begin-
 10 ning after such date.

11 **TITLE III—ENCOURAGING THE**
 12 **DEVELOPMENT AND AVAIL-**
 13 **ABILITY OF RENEWABLE EN-**
 14 **ERGY**

15 **SEC. 301. FEDERAL RENEWABLE PORTFOLIO STANDARD.**

16 (a) IN GENERAL.—Title VI of the Public Utility Reg-
 17 ulatory Policies Act of 1978 is amended by adding at the
 18 end the following:

19 **“SEC. 611. FEDERAL RENEWABLE PORTFOLIO STANDARD.**

20 **“(a) MINIMUM RENEWABLE GENERATION REQUIRE-**
 21 **MENT.—**For each calendar year beginning in calendar
 22 year 2008, each retail electric supplier shall submit to the
 23 Secretary, not later than April 1 of the following calendar
 24 year, renewable energy credits in an amount equal to the
 25 required annual percentage specified in subsection (b).

1 “(b) REQUIRED ANNUAL PERCENTAGE.—For cal-
 2 endar years 2008 through 2037, the required annual per-
 3 centage of the retail electric supplier’s base amount that
 4 shall be generated from renewable energy resources, or
 5 otherwise credited towards such percentage requirement
 6 pursuant to subsection (c), shall be the percentage speci-
 7 fied in the following table:

“Calendar Years	Required annual percentage
2008	2
2009	4
2010	6
2011	8
2012	10
2013	12
2014	14
2015	16
2016	18
2017	20
2018	22
2019	24
2020 and thereafter	25.

8 “(c) SUBMISSION OF CREDITS.—(1) A retail electric
 9 supplier may satisfy the requirements of subsection (a)
 10 through the submission of renewable energy credits—

11 “(A) issued to the retail electric supplier under
 12 subsection (d);

13 “(B) obtained by purchase or exchange under
 14 subsection (e); or

15 “(C) borrowed under subsection (f).

16 “(2) A renewable energy credit may be counted to-
 17 ward compliance with subsection (a) only once.

1 “(d) ISSUANCE OF CREDITS.—(1) The Secretary
2 shall establish by rule, not later than 1 year after the date
3 of enactment of this section, a program to issue and mon-
4 itor the sale or exchange of, and track, renewable energy
5 credits and enforce the requirements of this section.

6 “(2) Under the program established by the Secretary,
7 an entity that generates electric energy through the use
8 of a renewable energy resource may apply to the Secretary
9 for the issuance of renewable energy credits. The applicant
10 must demonstrate that the electric energy will be trans-
11 mitted onto the grid or, in the case of a generation offset,
12 that the electric energy offset would have otherwise been
13 consumed on site. The application shall indicate—

14 “(A) the type of renewable energy resource used
15 to produce the electricity;

16 “(B) the location where the electric energy was
17 produced; and

18 “(C) any other information the Secretary deter-
19 mines appropriate.

20 “(3)(A) Except as provided in subparagraphs (B),
21 (C), and (D), the Secretary shall issue to each entity that
22 generates electric energy one renewable energy credit for
23 each kilowatt hour of electric energy the entity generates
24 from the date of enactment of this section and in each

1 subsequent calendar year through the use of a renewable
2 energy resource at an eligible facility.

3 “(B) For incremental hydropower the renewable en-
4 ergy credits shall be calculated based on the expected in-
5 crease in average annual generation resulting from the ef-
6 ficiency improvements or capacity additions. The number
7 of credits shall be calculated using the same water flow
8 information used to determine a historic average annual
9 generation baseline for the hydroelectric facility and cer-
10 tified by the Secretary or the Federal Energy Regulatory
11 Commission. The calculation of the renewable energy cred-
12 its for incremental hydropower shall not be based on any
13 operational changes at the hydroelectric facility not di-
14 rectly associated with the efficiency improvements or ca-
15 pacity additions.

16 “(C) For electric energy generated by a renewable en-
17 ergy resource at an on-site eligible facility, used to offset
18 part or all of the customer’s requirements for electric en-
19 ergy, the Secretary shall issue three renewable energy
20 credits for each kilowatt hour generated.

21 “(D) In the case of a retail electric supplier that is
22 subject to a State renewable standard program that—

23 “(i) requires the generation of electricity from
24 renewable energy; or

1 “(ii) provides for alternative compliance pay-
2 ments in satisfaction of applicable State require-
3 ments under the program, the Secretary shall issue
4 an amount of renewable energy credits equal to the
5 amount of renewable energy credits that the Sec-
6 retary would have issued had a payment of the same
7 amount been made to the Secretary under sub-
8 section (g).

9 Such renewable energy credits may be applied against the
10 retail electric supplier’s own required annual percentage
11 or may be transferred for use only by an associate com-
12 pany of the retail electric supplier.

13 “(E) To be eligible for a renewable energy credit, the
14 unit of electric energy generated through the use of a re-
15 newable energy resource may be sold or may be used by
16 the generator. If both a renewable energy resource and
17 a nonrenewable energy resource are used to generate the
18 electric energy, the Secretary shall issue renewable energy
19 credits based on the proportion of the renewable energy
20 resources used. The Secretary shall identify renewable en-
21 ergy credits by type and date of generation.

22 “(4) When a generator sells electric energy generated
23 through the use of a renewable energy resource to a retail
24 electric supplier under a contract subject to section 210
25 of this Act, the retail electric supplier is treated as the

1 generator of the electric energy for the purposes of this
2 section or the duration of the contract.

3 “(5) The Secretary shall issue renewable energy cred-
4 its for existing facility offsets to be applied against a retail
5 electric supplier’s required annual percentage. Such cred-
6 its are not tradeable and may be used only in the calendar
7 year generation actually occurs.

8 “(e) CREDIT TRADING.—A renewable energy credit,
9 may be sold or exchanged by the entity to whom issued
10 or by any other entity who acquires the renewable energy
11 credit, except for those renewable energy credits issued
12 pursuant to subsection (d)(3)(E). A renewable energy
13 credit for any year that is not used to satisfy the minimum
14 renewable generation requirement of subsection (a) for
15 that year may be carried forward for use within the next
16 4 years.

17 “(f) RENEWABLE ENERGY CREDIT BORROWING.—At
18 any time before the end of calendar year 2010, a retail
19 electric supplier that has reason to believe it will not have
20 sufficient renewable energy credits to comply with sub-
21 section (a) may—

22 “(1) submit a plan to the Secretary dem-
23 onstrating that the retail electric supplier will earn
24 sufficient credits within the next 3 calendar years
25 which, when taken into account, will enable the re-

1 tail electric supplier to meet the requirements of
2 subsection (a) for calendar year 2010 and the subse-
3 quent calendar years involved; and

4 “(2) upon the approval of the plan by the Sec-
5 retary, apply renewable energy credits that the plan
6 demonstrates will be earned within the next 3 cal-
7 endar years to meet the requirements of subsection
8 (a) for each calendar year involved.

9 The retail electric supplier must repay all of the borrowed
10 renewable energy credits by submitting an equivalent
11 number of renewable energy credits, in addition to those
12 otherwise required under subsection (a), by calendar year
13 2008 or any earlier deadlines specified in the approved
14 plan. Failure to repay the borrowed renewable energy
15 credits shall subject the retail electric supplier to civil pen-
16 alties under subsection (h) for violation of the require-
17 ments of subsection (a) for each calendar year involved.

18 “(g) CREDIT COST CAP.—The Secretary shall offer
19 renewable energy credits for sale at the lesser of 3 cents
20 per kilowatt-hour or 200 percent of the average market
21 value of renewable credits for the applicable compliance
22 period. On January 1 of each year following calendar year
23 2006, the Secretary shall adjust for inflation the price
24 charged per credit for such calendar year, based on the
25 Gross Domestic Product Implicit Price Deflator.

1 “(h) ENFORCEMENT.—A retail electric supplier that
2 does not submit renewable energy credits as required
3 under subsection (a) shall be liable for the payment of a
4 civil penalty. That penalty shall be calculated on the basis
5 of the number of renewable energy credits not submitted,
6 multiplied by the lesser of 4.5 cents or 300 percent of the
7 average market value of credits for the compliance period.
8 Any such penalty shall be due and payable without de-
9 mand to the Secretary as provided in the regulations
10 issued under subsection (d).

11 “(i) INFORMATION COLLECTION.—The Secretary
12 may collect the information necessary to verify and
13 audit—

14 “(1) the annual electric energy generation and
15 renewable energy generation of any entity applying
16 for renewable energy credits under this section;

17 “(2) the validity of renewable energy credits
18 submitted by a retail electric supplier to the Sec-
19 retary; and

20 “(3) the quantity of electricity sales of all retail
21 electric suppliers.

22 “(j) ENVIRONMENTAL SAVINGS CLAUSE.—Incre-
23 mental hydropower shall be subject to all applicable envi-
24 ronmental laws and licensing and regulatory requirements.

1 “(k) EXISTING PROGRAMS.—(1) This section does
2 not preclude a State from imposing additional renewable
3 energy requirements in that State, including specifying eli-
4 gible technologies under such State requirements.

5 “(2) In the rule establishing this program, the Sec-
6 retary shall incorporate common elements of existing re-
7 newable energy programs, including state programs, to en-
8 sure administrative ease, market transparency and effec-
9 tive enforcement. The Secretary shall work with the States
10 to minimize administrative burdens and costs and to avoid
11 duplicating compliance charges to retail electric suppliers.

12 “(l) DEFINITIONS.—For purposes of this section:

13 “(1) BIOMASS.—The term ‘biomass’ means any
14 organic material that is available on a renewable or
15 recurring basis, including dedicated energy crops,
16 trees grown for energy production, wood waste and
17 wood residues, plants (including aquatic plants,
18 grasses, and agricultural crops), residues, fibers,
19 animal wastes and other organic waste materials
20 (but not including unsegregated municipal solid
21 waste (garbage)), and fats and oils, except that with
22 respect to material removed from National Forest
23 System lands the term includes only organic mate-
24 rial from—

25 “(A) precommercial thinnings;

1 “(B) slash;

2 “(C) brush; and

3 “(D) mill residues.

4 “(2) ELIGIBLE FACILITY.—The term ‘eligible
5 facility’ means—

6 “(A) a facility for the generation of electric
7 energy from a renewable energy resource that is
8 placed in service on or after the date of enact-
9 ment of this section or the effective date of the
10 applicable State renewable portfolio standard
11 program; or

12 “(B) a repowering or cofiring increment
13 that is placed in service on or after the date of
14 enactment of this section or the effective date
15 of the applicable State renewable portfolio
16 standard program at a facility for the genera-
17 tion of electric energy from a renewable energy
18 resource that was placed in service before that
19 date.

20 “(3) EXISTING FACILITY OFFSET.—The term
21 ‘existing facility offset’ means renewable energy gen-
22 erated from an existing facility, not classified as an
23 eligible facility, that is owned or under contract, di-
24 rectly or indirectly, to a retail electric supplier on
25 the date of enactment of this section.

1 “(4) INCREMENTAL HYDROPOWER.—The term
2 ‘incremental hydropower’ means additional genera-
3 tion that is achieved from increased efficiency or ad-
4 ditions of capacity on or after the date of enactment
5 of this section or the effective date of the applicable
6 State renewable portfolio standard program, at a hy-
7 droelectric facility that was placed in service before
8 that date.

9 “(5) RENEWABLE ENERGY.—The term ‘renew-
10 able energy’ means electric energy generated by a re-
11 newable energy resource.

12 “(6) RENEWABLE ENERGY RESOURCE.—The
13 term ‘renewable energy resource’ means solar, wind,
14 ocean, geothermal energy, biomass (not including
15 municipal solid waste), landfill gas, a generation off-
16 set, or incremental hydropower.

17 “(7) REPOWERING OR COFIRING INCREMENT.—
18 The term ‘repowering or cofiring increment’
19 means—

20 “(A) the additional generation from a
21 modification that is placed in service on or after
22 the date of enactment of this section or the ef-
23 fective date of the applicable State renewable
24 portfolio standard program to expand electricity
25 production at a facility used to generate electric

1 energy from a renewable energy resource or to
2 cofire biomass that was placed in service before
3 the date of enactment of this section or the ef-
4 fective date of the applicable State renewable
5 portfolio standard program, or

6 “(B) the additional generation above the
7 average generation in the 3 years preceding the
8 date of enactment of this section or the effec-
9 tive date of the applicable State renewable port-
10 folio standard program to expand electricity
11 production at a facility used to generate electric
12 energy from a renewable energy resource or to
13 cofire biomass that was placed in service before
14 the date of enactment of this section or the ef-
15 fective date of the applicable State renewable
16 portfolio standard program.

17 “(8) RETAIL ELECTRIC SUPPLIER.—The term
18 ‘retail electric supplier’ means a person that sells
19 electric energy to electric consumers and sold not
20 less than 1,000,000 megawatt-hours of electric en-
21 ergy to electric consumers for purposes other than
22 resale during the preceding calendar year; except
23 that such term does not include the United States,
24 a State or any political subdivision of a State, or any

1 agency, authority, or instrumentality of any one or
2 more of the foregoing or a rural electric cooperative.

3 “(9) RETAIL ELECTRIC SUPPLIER’S BASE
4 AMOUNT.—The term ‘retail electric supplier’s base
5 amount’ means the total amount of electric energy
6 sold by the retail electric supplier, expressed in kilo-
7 watt hours, to electric customers for purposes other
8 than resale during the most recent calendar year for
9 which information is available, excluding electric en-
10 ergy generated by a hydroelectric facility.

11 “(m) RECOVERY OF COSTS.—An electric utility
12 whose sales of electric energy are subject to rate regula-
13 tion, including any utility whose rates are regulated by the
14 Commission and any State regulated electric utility, shall
15 not be denied the opportunity to recover the full amount
16 of the prudently incurred incremental cost of renewable
17 energy obtained to comply with the requirements of sub-
18 section (a) for sales to electric customers which are subject
19 to rate regulation, notwithstanding any other law, regula-
20 tion, rule, administrative order or any agreement between
21 the electric utility and either the Commission or a State
22 regulatory authority. For the purpose of this subsection,
23 the term ‘incremental cost of renewable energy’ means—

24 “(1) the additional cost to the electric utility for
25 the purchase or generation of renewable energy to

1 satisfy the minimum renewable generation require-
2 ment of subsection (a), as compared to the cost of
3 the electric energy the electric utility would generate
4 or purchase from another source but for the require-
5 ments of subsection (a); and

6 “(2) the cost to the electric utility for acquiring
7 by purchase or exchange renewable energy credits to
8 satisfy the minimum renewable generation require-
9 ment of subsection (a).

10 For purposes of this subsection, the definitions in section
11 3 of this Act shall apply to the terms ‘electric utility’,
12 ‘State regulated electric utility’, ‘State agency’, ‘Commis-
13 sion’, and ‘State regulatory authority’.

14 “(n) VOLUNTARY PARTICIPATION.—The Secretary
15 shall encourage federally-owned utilities, municipally-
16 owned utilities and rural electric cooperatives that sell
17 electric energy to electric consumers for purposes other
18 than resale to participate in the renewable portfolio stand-
19 ard program. A municipally-owned utility or rural electric
20 cooperative that owns or has under contract a facility for
21 the generation of electric energy from a renewable energy
22 resource may not sell or trade renewable energy credits
23 generated by such resource unless it participates in the
24 renewable portfolio standard program under the same
25 terms and conditions as retail electric suppliers.

1 “(o) PROGRAM REVIEW.—The Secretary shall con-
2 duct a comprehensive evaluation of all aspects of the Re-
3 newable Portfolio Standard program, within 10 years of
4 enactment of this section. The study shall include an eval-
5 uation of—

6 “(1) the effectiveness of the program in increas-
7 ing the market penetration and lower the cost of the
8 eligible renewable technologies;

9 “(2) the opportunities for any additional tech-
10 nologies emerging since enactment of this section;

11 “(3) the impact on the regional diversity and
12 reliability of supply sources, including the power
13 quality benefits of distributed generation;

14 “(4) the regional resource development relative
15 to renewable potential and reasons for any under in-
16 vestment in renewable resources; and

17 “(5) the net cost/benefit of the renewable port-
18 folio standard to the national and state economies,
19 including retail power costs, economic development
20 benefits of investment, avoided costs related to envi-
21 ronmental and congestion mitigation investments
22 that would otherwise have been required, impact on
23 natural gas demand and price, effectiveness of green
24 marketing programs at reducing the cost of renew-
25 able resources.

1 The Secretary shall transmit the results of the program
2 review and any recommendations for modifications and
3 improvements to the program to Congress not later than
4 January 1, 2014.

5 “(p) PROGRAM IMPROVEMENTS.—Using the results
6 of the review under subsection (o), the Secretary shall by
7 rule, within 6 months of the completion of the review,
8 make such modifications to the program as may be nec-
9 essary to improve the efficiency of the program and maxi-
10 mize the use of renewable energy under the program.

11 “(q) STATE RENEWABLE ENERGY ACCOUNT PRO-
12 GRAM.—(1) The Secretary shall establish, not later than
13 December 31, 2007, a State renewable energy account
14 program.

15 “(2) All money collected by the Secretary from the
16 sale of renewable energy credits shall be deposited into the
17 state renewable energy account established pursuant to
18 this subsection. The State renewable energy account shall
19 be held by the Secretary and shall not be transferred to
20 the Treasury Department.

21 “(3) Proceeds deposited in the state renewable energy
22 account shall be used by the Secretary for a program to
23 provide grants to the State agency responsible for devel-
24 oping State energy conservation plans under section 363
25 of the Energy Policy and Conservation Act (42 U.S.C.

1 6322) for the purposes of promoting renewable energy
2 production and providing energy assistance and weather-
3 ization services to low-income consumers.

4 “(4) The Secretary may issue guidelines and criteria
5 for grants awarded under this subsection. At least 75 per-
6 cent of the funds provided to each State shall be used for
7 promoting renewable energy production. The funds shall
8 be allocated to the States on the basis of retail electric
9 sales subject to the Renewable Portfolio Standard under
10 this section or through voluntary participation. To the ex-
11 tent Federal credits have been issued without payment due
12 to reciprocity with State programs under subsection
13 (d)(3)(E), deductions shall be made from the relevant
14 State’s allocation. State energy offices receiving grants
15 under this section shall maintain such records and evi-
16 dence of compliance as the Secretary may require.

17 “(r) SUNSET.—This section expires December 31,
18 2030.”.

19 (b) TABLE OF CONTENTS.—The table of contents for
20 such title is amended by adding the following new item
21 at the end:

“Sec. 119. Federal renewable portfolio standard.”.

1 **SEC. 302. ELECTRICITY TRANSMISSION LINES DESIGNED**
2 **TO CARRY ELECTRICITY FROM RENEWABLE**
3 **ENERGY RESOURCES.**

4 The Secretary of the Treasury, in consultation with
5 the Secretary of Energy, the Secretary of Commerce, and
6 the Administrator of the Environmental Protection Agen-
7 cy, shall establish an appropriate investment tax credit for
8 the construction of new electricity transmission lines de-
9 signed primarily to carry electricity from renewable energy
10 resources. Such credit shall be sufficient to encourage the
11 development of promising rural renewable energy domestic
12 resources that otherwise would likely not be developed.

13 **SEC. 303. EXTENSION THROUGH 2017 FOR PLACING QUALI-**
14 **FIED FACILITIES IN SERVICE FOR PRO-**
15 **DUCING RENEWABLE ELECTRIC ENERGY.**

16 (a) IN GENERAL.—Subsection (d) of section 45 of the
17 Internal Revenue Code of 1986 is amended—

18 (1) by striking “January 1, 2008” each place
19 it appears and inserting “January 1, 2018”, and

20 (2) in paragraph (4) by striking the parenthet-
21 ical.

22 (b) EFFECTIVE DATE.—The amendments made by
23 this section shall apply to property originally placed in
24 service on or after January 1, 2007.

1 **SEC. 304. NET METERING.**

2 (a) ADOPTION OF STANDARD.—Section 111(d)(11)
3 of the Public Utility Regulatory Policies Act of 1978 (16
4 U.S.C. 2621(d)) is amended to read as follows:

5 “(11) NET METERING.—(A) Each electric util-
6 ity shall make available upon request net metering
7 service to any electric consumer that the electric
8 utility serves.

9 “(B) For purposes of implementing this para-
10 graph, any reference contained in this section to the
11 date of enactment of the Public Utility Regulatory
12 Policies Act of 1978 shall be deemed to be a ref-
13 erence to the date of enactment of this paragraph.

14 “(C) Notwithstanding subsections (b) and (c) of
15 section 112, each State regulatory authority may
16 consider and make a determination concerning
17 whether it is appropriate in the public interest to not
18 implement the standard set out in subparagraph (A)
19 not later than 1 year after the date of enactment of
20 this paragraph.

21 “(D) Nothing in this section shall preclude a
22 State from establishing additional incentives or to
23 encourage on-site generating facilities and net me-
24 tering in addition to that required under this sec-
25 tion.

1 “(E) The Secretary shall report within 11
2 months of enactment and annually thereafter on the
3 public benefit provided by adoption of net metering
4 and interconnection standards, and the status of
5 state adoption of such.”.

6 (b) SPECIAL RULES FOR NET METERING.—Section
7 115 of the Public Utility Regulatory Policies Act of 1978
8 (16 U.S.C. 2625) is amended by adding at the end the
9 following:

10 “(i) NET METERING.—In undertaking the consider-
11 ation and making the determination under section 111
12 with respect to the standard concerning net metering es-
13 tablished by section 111(d)(11), the term ‘net metering
14 service’ shall mean a service provided in accordance with
15 the following standards:

16 “(1) An electric utility—

17 “(A) shall charge the owner or operator of
18 an on-site generating facility rates and charges
19 that are identical to those that would be
20 charged other electric consumers of the electric
21 utility in the same rate class; and

22 “(B) shall not charge the owner or oper-
23 ator of an on-site generating facility any addi-
24 tional standby, capacity, interconnection, or
25 other rate or charge.

1 “(2) An electric utility that sells electric energy
2 to the owner or operator of an on-site generating fa-
3 cility shall measure the quantity of electric energy
4 produced by the on-site facility and the quantity of
5 electric energy consumed by the owner or operator
6 of an on-site generating facility during a billing pe-
7 riod with a single bi-directional meter or otherwise
8 in accordance with reasonable metering practices.

9 “(3) If the quantity of electric energy sold by
10 the electric utility to an on-site generating facility
11 exceeds the quantity of electric energy supplied by
12 the on-site generating facility to the electric utility
13 during the billing period, the electric utility may bill
14 the owner or operator for the net quantity of electric
15 energy sold, in accordance with reasonable metering
16 practices.

17 “(4) If the quantity of electric energy supplied
18 by the on-site generating facility to the electric util-
19 ity exceeds the quantity of electric energy sold by
20 the electric utility to the on-site generating facility
21 during the billing period—

22 “(A) the electric utility may bill the owner
23 or operator of the on-site generating facility for
24 the appropriate charges for the billing period in
25 accordance with paragraph; and

1 “(B) the owner or operator of the on-site
2 generating facility shall be credited for the ex-
3 cess kilowatt-hours generated during the billing
4 period, with the kilowatt-hour credit appearing
5 on the bill for the following billing period.

6 “(5) An eligible on-site generating facility and
7 net metering system used by an electric consumer
8 shall meet all applicable safety, performance, reli-
9 ability, and interconnection standards established by
10 the National Electrical Code, the Institute of Elec-
11 trical and Electronics Engineers, and Underwriters
12 Laboratories.

13 “(6) The Commission, after consultation with
14 State regulatory authorities and unregulated electric
15 utilities and after notice and opportunity for com-
16 ment, may adopt, by rule, additional control and
17 testing and interconnection requirements for on-site
18 generating facilities and net metering systems that
19 the Commission determines are necessary to protect
20 public safety and system reliability.

21 “(7) For purposes of this subsection—

22 “(A) the term ‘eligible on-site generating
23 facility’ means a facility on the site of a resi-
24 dential electric consumer with a maximum gen-
25 erating capacity of 10 kilowatts or less that is

1 fueled by solar energy, wind energy, or fuel
 2 cells; or a facility on the site of a commercial
 3 electric consumer with a maximum generating
 4 capacity of 500 kilowatts or less that is fueled
 5 solely by a renewable energy resource, landfill
 6 gas, or a high efficiency system;

7 “(B) the term ‘renewable energy resource’
 8 means solar, wind, biomass, micro-freeflow
 9 hydro, or geothermal energy;

10 “(C) the term ‘high efficiency system’
 11 means fuel cells or combined heat and power;
 12 and

13 “(D) the term ‘net metering service’ means
 14 service to an electric consumer under which
 15 electric energy generated by that electric con-
 16 sumer from an eligible on-site generating facil-
 17 ity and delivered to the local distribution facili-
 18 ties may be used to offset electric energy pro-
 19 vided by the electric utility to the electric con-
 20 sumer during the applicable billing period.”.

21 **SEC. 305. LOAN GUARANTEES FOR BIOREFINERIES AND RE-**
 22 **NEWABLE ENERGY PRODUCTION FACILITIES.**

23 (a) **AUTHORITY.**—The Secretary of Energy may
 24 guarantee not more than 80 percent of the principal of

1 any loan made to any person or other entity for any of
2 the following:

3 (1) The construction of any new facility that
4 primarily makes cellulosic biomass ethanol or bio-
5 methanol or generates electricity, or any combina-
6 tion thereof, from wind energy, biomass, solar en-
7 ergy, ocean energy or geothermal sources.

8 (2) The modification of any facility that pri-
9 marily generates electricity from wind energy, bio-
10 mass, solar energy, ocean energy, or geothermal
11 sources if such modification adds additional electric
12 generation capacity from any of such sources.

13 (3) The modification of any facility that pri-
14 marily makes cellulosic biomass ethanol, biometh-
15 anol, or electricity from wind energy, biomass, solar
16 energy, ocean energy or geothermal sources if such
17 modification adds additional capacity to make cel-
18 lulosic biomass ethanol or biomethanol from any
19 such source or combination of sources.

20 (4) The conversion of any facility that primarily
21 makes ethanol to a facility that primarily makes cel-
22 lulosic biomass ethanol.

23 (5) The construction of any new ninety percent
24 sequestration coal power facility.

25 (b) CONDITIONS.—

1 (1) LOAN MAKER.—A loan guaranteed under
2 this section shall be made by a financial institution
3 subject to the examination of the Secretary.

4 (2) ENVIRONMENTAL LAWS.—Any project for
5 which a loan guarantee is issued under this section
6 shall be required by the Secretary as a condition of
7 the loan guarantee to comply with all applicable
8 Federal, State, and local environmental laws.

9 (3) OTHER REQUIREMENTS.—Loan require-
10 ments, including term, fees, maximum size, collateral
11 requirements, and other features, shall be deter-
12 mined by the Secretary.

13 (c) LIMITATION ON AMOUNT.—The Secretary of En-
14 ergy may make commitments to guarantee loans under
15 this section only to the extent that the total amount of
16 loan principal guaranteed by the Secretary does not exceed
17 \$49,000,000,000. Of such total amount, the Secretary
18 may make commitments to guarantee—

19 (1) not more than \$7,000,000,000 of loan prin-
20 cipal for each of the following project types—

21 (A) biomass facilities;

22 (B) geothermal energy facilities;

23 (C) ninety percent sequestration coal
24 power facilities;

25 (D) ocean energy facilities; and

1 (E) solar energy facilities;

2 (2) not more than \$7,000,000,000 of loan prin-
3 cipal for cellulosic biomass ethanol;

4 (3) not more than \$2,000,000,000 of loan prin-
5 cipal for biomethanol facilities; and

6 (4) not more than \$5,000,000,000 of loan prin-
7 cipal for wind energy facilities.

8 (d) REGULATIONS.—The Secretary of Energy may
9 issue regulations to carry out the provisions of this sec-
10 tion.

11 (e) DEFINITIONS.—As used in this section:

12 (1) The term “agricultural livestock” includes
13 bovine, swine, poultry, and sheep.

14 (2) The term “agricultural livestock waste nu-
15 trients” means agricultural livestock manure and lit-
16 ter, including wood shavings, straw, rice hulls, and
17 other bedding material for the disposition of ma-
18 nure.

19 (3) The term “biomass facility” means a facil-
20 ity that generates electricity from closed-loop bio-
21 mass, open-loop biomass, or both.

22 (4) The term “biomethanol facility” means a
23 facility that generates methanol from biomass, ani-
24 mal waste, or municipal solid waste.

1 (5) The term “cellulosic biomass ethanol”
2 means ethanol derived from any nonhazardous
3 lignocellulosic or hemicellulosic matter that is avail-
4 able on a renewable or recurring basis, including—

5 (A) dedicated energy crops and trees;

6 (B) the following forest-related resources—

7 (i) harvesting residue;

8 (ii) pre-commercial thinnings;

9 (iii) slash; and

10 (iv) bush;

11 (C) plants;

12 (D) grasses

13 (E) agricultural residues

14 (F) fibers;

15 (G) animal wastes and other waste mate-
16 rials; and

17 (H) municipal solid waste.

18 (6) The term “cellulosic biomass ethanol facil-
19 ity” means a facility that produces cellulosic biomass
20 ethanol.

21 (7) The term “closed-loop biomass” means any
22 organic material from a plant which is planted exclu-
23 sively for purposes of being used at a biomass facil-
24 ity to produce electricity.

1 (8) The term “geothermal energy facility”
2 means a facility that generates electricity from geo-
3 thermal energy.

4 (9) The term “ninety percent sequestration coal
5 power facility” means a facility that generates elec-
6 tricity using coal as a fuel source and sequesters,
7 rather than releases to the atmosphere, at least 90
8 percent of the carbon dioxide emissions resulting
9 from such coal combustion.

10 (10) The term “ocean energy facility” means a
11 facility that generates electricity from ocean tidal,
12 wave, current or thermal processes.

13 (11) The term “open-loop biomass” means any
14 agricultural livestock waste nutrients, or any solid,
15 nonhazardous, cellulosic waste material which is seg-
16 regated from other waste materials and which is de-
17 rived from—

18 (A) any of the following forest-related re-
19 sources: mill and harvesting residues,
20 precommercial thinnings, slash, and brush, but
21 not including old-growth timber or black liquor,

22 (B) old wood waste materials, including
23 waste pallets, crates, dunnage, manufacturing
24 and construction wood wastes (other than pres-
25 sure-treated, chemically-treated, or painted

wood wastes), and landscape or right-of-way tree trimmings, but not including unsegregated municipal solid waste (garbage) or postconsumer wastepaper which can be recycled affordably, or

(C) agriculture sources, including orchard tree crops, vineyard, grain, legumes, sugar, and other crop by-products or residues.

Such term shall not include closed-loop biomass or biomass burned in conjunction with fossil fuel (co-firing) beyond such fossil fuel required for startup and flame stabilization.

(12) The term “sequestration” means the capture, long-term separation, isolation, or removal of greenhouse gases from the atmosphere.

(13) The term “solar energy facility” means a facility that generates electricity from solar energy with a capacity of 25 kilowatts or more.

(14) The term “wind energy facility” means a facility that generates electricity from wind energy.

(f) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary of Energy such sums as may be necessary to cover the cost of loan guarantees, as defined by section 502(5) of the Federal Credit Reform Act of 1990 (2 U.S.C. 661a(5)).

1 **TITLE IV—INCREASING THE RE-**
2 **NEWABLE ENERGY USE AND**
3 **ENERGY EFFICIENCY OF THE**
4 **FEDERAL GOVERNMENT**

5 **SEC. 401. FEDERAL ENERGY EFFICIENCY.**

6 The President shall take measures necessary to en-
7 sure that electricity consumption for nondefense related
8 activities of the Federal Government shall be decreased
9 by 35 percent by 2015.

10 **SEC. 402. GREEN BUILDING STANDARDS FOR FEDERAL**
11 **BUILDINGS.**

12 (a) **REQUIREMENT.**—A Federal building for which
13 the design phase for construction or major renovation is
14 begun after the date of enactment of this Act shall be de-
15 signed, constructed, and certified to meet, at a minimum,
16 the LEED silver standard.

17 (b) **EXCEPTIONS.**—Subsection (a) shall not apply to
18 Federal laboratories or defense facilities, or to a building
19 of a type for which no LEED silver standard exists.

20 (c) **STUDY.**—Not later than 1 year after the date of
21 enactment of this Act, the Secretary of Energy shall trans-
22 mit to Congress the results of a study comparing the ex-
23 pected energy savings resulting from the implementation
24 of this section with energy savings under all other Federal
25 energy savings requirements. The Secretary shall include

1 any recommendations for changes to Federal law nec-
 2 essary to reduce or eliminate duplicative or inconsistent
 3 Federal energy savings requirements.

4 (d) DEFINITION.—For purposes of this section, the
 5 term “LEED silver standard” means the Leadership in
 6 Energy and Environmental Design green building rating
 7 standard identified as silver by the United States Green
 8 Building Council.

9 **SEC. 403. FEDERAL RENEWABLE AND CLEAN ENERGY USE.**

10 (a) IN GENERAL.—The President shall take meas-
 11 ures necessary to ensure that, within 10 years after the
 12 date of the enactment of this Act, at least 20 percent of
 13 the electricity consumed by nondefense related activities
 14 of the Federal Government shall be generated from renew-
 15 able sources or zero-emission fossil fuel energy sources.

16 (b) SOLAR PANELS AND PHOTOVOLTAICS.—The re-
 17 quirement in subsection (a) may be achieved through the
 18 purchase and installation of solar panels or photovoltaics
 19 on executive agency properties.

20 **SEC. 404. FUEL ECONOMY OF THE FEDERAL FLEET OF VE-**
 21 **HICLES.**

22 (a) BASELINE AVERAGE FUEL ECONOMY.—The head
 23 of each Executive agency shall determine, for each class
 24 of vehicles that are in the agency’s fleet of vehicles in fiscal
 25 year 2007, the average fuel economy for all of the vehicles

1 in that class that are in the agency's fleet of vehicles for
2 that fiscal year. For the purposes of this section, the aver-
3 age fuel economy so determined for the agency's vehicles
4 in a class of vehicles shall be the baseline average fuel
5 economy for the agency's fleet of vehicles in that class.

6 (b) INCREASE OF AVERAGE FUEL ECONOMY.—The
7 head of an Executive agency shall manage the procure-
8 ment of vehicles in each class of vehicles for that agency
9 in such a manner that—

10 (1) not later than September 30, 2009, the av-
11 erage fuel economy of the new vehicles in the agen-
12 cy's fleet of vehicles in each class of vehicles is not
13 less than 3 miles per gallon higher than the baseline
14 average fuel economy determined for that class; and

15 (2) not later than September 30, 2012, the av-
16 erage fuel economy of the new vehicles in the agen-
17 cy's fleet of vehicles in each class of vehicles is not
18 less than 6 miles per gallon higher than the baseline
19 average fuel economy determined for that class.

20 (c) CALCULATION OF AVERAGE FUEL ECONOMY.—
21 Average fuel economy shall be calculated for the purposes
22 of this section in accordance with guidance which the Sec-
23 retary of Transportation shall prescribe for the implemen-
24 tation of this section.

25 (d) DEFINITIONS.—In this section:

1 (1) The term “class of vehicles” means a class
2 of vehicles for which an average fuel economy stand-
3 ard is in effect under chapter 329 of title 49, United
4 States Code.

5 (2) The term “Executive agency” has the
6 meaning given that term in section 105 of title 5,
7 United States Code, but also includes the United
8 States Postal Service.

9 (3) The term “new vehicle”, with respect to the
10 fleet of vehicles of an executive agency, means a ve-
11 hicle procured by or for the agency after September
12 30, 2008.

13 **SEC. 405. FEDERAL VEHICLE EFFICIENCY REQUIREMENT.**

14 (a) IN GENERAL.—At least ten percent of the motor
15 vehicles purchased by an Executive agency in any fiscal
16 year shall be comprised of high-efficiency vehicles or hy-
17 brid electric vehicles.

18 (b) DEFINITIONS.—In this Act:

19 (1) The term “Executive agency” has the
20 meaning given that term in section 105 of title 5,
21 United States Code, but also includes the United
22 States Postal Service.

23 (2) The term “high-efficiency vehicle” means a
24 motor vehicle the fuel economy of which is rated at
25 not less than 40 miles per gallon.

1 (3) The term “hybrid electric vehicle” means a
2 motor vehicle with a fuel-efficient gasoline engine as-
3 sisted by an electric motor.

4 (4) The term “motor vehicle” has the meaning
5 given that term in section 102(7) of title 40, United
6 States Code.

7 (c) PRO-RATED APPLICABILITY IN YEAR OF ENACT-
8 MENT.—In the fiscal year in which this Act is enacted,
9 the requirement in subsection (a) shall only apply with re-
10 spect to motor vehicles purchased after the date of the
11 enactment of this Act in such fiscal year.

12 **TITLE V—INCREASING AMER-**
13 **ICAN ENERGY RESEARCH**
14 **AND DEVELOPMENT**

15 **SEC. 501. AUTHORIZATION OF APPROPRIATIONS FOR THE**
16 **DEPARTMENT OF ENERGY FOR BASIC RE-**
17 **SEARCH.**

18 Section 971(b) of the Energy Policy Act of 2005 (42
19 U.S.C. 16311(b)) is amended—

20 (1) in paragraph (2), by striking “and” at the
21 end;

22 (2) in paragraph (3), by striking the period at
23 the end and inserting a semicolon; and

24 (3) by adding at the end the following:

25 “(4) \$5,320,000,000 for fiscal year 2010;

1 “(5) \$5,851,000,000 for fiscal year 2011;
2 “(6) \$6,436,000,000 for fiscal year 2012; and
3 “(7) \$7,080,000,000 for fiscal year 2013.”.

4 **SEC. 502. MATHEMATICS, SCIENCE, AND ENGINEERING**
5 **EDUCATION AT THE DEPARTMENT OF EN-**
6 **ERGY.**

7 (a) SCIENCE EDUCATION PROGRAMS.—Section 3164
8 of the Department of Energy Science Education Enhance-
9 ment Act (42 U.S.C. 7381a) is amended—

10 (1) by redesignating subsections (b) through (d)
11 as subsections (c) through (e), respectively;

12 (2) by inserting after subsection (a) the fol-
13 lowing:

14 “(b) ORGANIZATION OF MATHEMATICS, SCIENCE,
15 AND ENGINEERING EDUCATION PROGRAMS.—

16 “(1) DIRECTOR OF MATHEMATICS, SCIENCE
17 AND ENGINEERING EDUCATION.—The Secretary,
18 acting through the Under Secretary for Science (re-
19 ferred to in this subsection as the ‘Under Sec-
20 retary’), shall appoint a Director of Mathematics,
21 Science, and Engineering Education (referred to in
22 this subsection as the ‘Director’) with the principal
23 responsibility for administering mathematics,
24 science, and engineering education programs of the
25 Department.

1 “(2) QUALIFICATIONS.—The Director shall be
2 an individual, who by reason of professional back-
3 ground and experience, is specially qualified to ad-
4 vise the Under Secretary on all matters pertaining
5 to mathematics, science, and engineering education
6 at the Department.

7 “(3) DUTIES.—The Director shall—

8 “(A) oversee all mathematics, science, and
9 engineering education programs of the Depart-
10 ment;

11 “(B) represent the Department as the
12 principal interagency liaison for all mathe-
13 matics, science, and engineering education pro-
14 grams, unless otherwise represented by the Sec-
15 retary or the Under Secretary;

16 “(C) prepare the annual budget and advise
17 the Under Secretary on all budgetary issues for
18 mathematics, science, and engineering edu-
19 cation programs of the Department; and

20 “(D) perform other such matters related to
21 mathematics, science, and engineering edu-
22 cation as are required by the Secretary or the
23 Under Secretary.

24 “(4) STAFF AND OTHER RESOURCES.—The
25 Secretary shall assign to the Director such personnel

1 and other resources as the Secretary considers nec-
2 essary to permit the Director to carry out the duties
3 of the Director.

4 “(5) ASSESSMENT.—The Secretary shall offer
5 to enter into a contract with the National Academy
6 of Sciences under which the National Academy, not
7 later than 5 years after, and not later than 10 years
8 after, the date of enactment of this paragraph, shall
9 assess the performance of the mathematics, science,
10 and engineering education programs of the Depart-
11 ment.

12 “(6) AUTHORIZATION OF APPROPRIATIONS.—
13 There are authorized to be appropriated such sums
14 as are necessary to carry out this subsection.”; and

15 (3) by striking subsection (d) (as redesignated
16 by paragraph (1)) and inserting the following:

17 “(d) MATHEMATICS, SCIENCE, AND ENGINEERING
18 EDUCATION FUND.—The Secretary shall establish a
19 Mathematics, Science, and Engineering Education Fund,
20 using not less than 0.3 percent of the amount made avail-
21 able to the Department for research, development, dem-
22 onstration, and commercial application for each fiscal
23 year, to carry out sections 3165, 3166, and 3167.”.

24 (b) DEFINITION.—Section 3168 of the Department
25 of Energy Science Education Enhancement Act (42

1 U.S.C. 7381d) is amended by adding at the end the fol-
 2 lowing:

3 “(5) NATIONAL LABORATORY.—The term ‘Na-
 4 tional Laboratory’ has the meaning given the term
 5 in section 2 of the Energy Policy Act of 2005 (42
 6 U.S.C. 15801).”.

7 (c) MATHEMATICS, SCIENCE, AND ENGINEERING
 8 EDUCATION PROGRAMS.—The Department of Energy
 9 Science Education Enhancement Act (42 U.S.C. 7381 et
 10 seq.) is amended—

11 (1) by inserting after section 3162 the fol-
 12 lowing:

13 **“Subpart A—Science Education Enhancement”;**

14 (2) in section 3169, by striking “part” and in-
 15 serting “subpart”; and

16 (3) by adding at the end the following:

17 **“Subpart B—Mathematics, Science, and Engineering**
 18 **Education Programs**

19 **“SEC. 3170. DEFINITIONS.**

20 “In this subpart:

21 “(1) DIRECTOR.—The term ‘Director’ means
 22 the Director of Mathematics, Science, and Engineer-
 23 ing Education.

24 “(2) NATIONAL LABORATORY.—The term ‘Na-
 25 tional Laboratory’ has the meaning given the term

1 in section 2 of the Energy Policy Act of 2005 (42
2 U.S.C. 15801).

3 **“CHAPTER 1—ASSISTANCE FOR SPE-**
4 **CIALTY SCHOOLS FOR MATHEMATICS**
5 **AND SCIENCE**

6 **“SEC. 3171. ASSISTANCE FOR SPECIALTY SCHOOLS FOR**
7 **MATHEMATICS AND SCIENCE.**

8 “(a) IN GENERAL.—Consistent with sections 3165
9 and 3166, the Director shall make available necessary
10 funds for a program using scientific and engineering staff
11 of the National Laboratories, in which the staff—

12 “(1) assists teaching courses at statewide spe-
13 cialty secondary schools that provide comprehensive
14 mathematics and science (including engineering)
15 education; and

16 “(2) uses National Laboratory scientific equip-
17 ment in the teaching of the courses.

18 “(b) REPORT TO CONGRESS.—Not later than 2 years
19 after the date of enactment of the American Energy Inde-
20 pendence Act, the Director shall submit a report to the
21 appropriate committees of Congress detailing the impact
22 of the activities assisted with funds made available under
23 this section.

1 **“CHAPTER 2—EXPERIENTIAL-BASED**
2 **LEARNING OPPORTUNITIES**

3 **“SEC. 3175. EXPERIENTIAL-BASED LEARNING OPPORTUNI-**
4 **TIES.**

5 “(a) INTERNSHIPS AUTHORIZED.—From the
6 amounts authorized under subsection (d), the Secretary,
7 acting through the Director, shall establish a summer in-
8 ternship program for middle school and secondary school
9 students that shall—

10 “(1) provide the students with internships at
11 the National Laboratories; and

12 “(2) promote experiential, hands-on learning in
13 mathematics or science.

14 “(b) ELIGIBILITY CRITERIA.—The Director shall es-
15 tablish criteria to determine the sufficient level of aca-
16 demic preparedness necessary for a student to be eligible
17 for an internship under this section.

18 “(c) PRIORITY.—

19 “(1) IN GENERAL.—The Director shall give pri-
20 ority for an internship under this section to a stu-
21 dent who meets the eligibility criteria described in
22 subsection (b) and who attends a school—

23 “(A)(i) in which not less than 40 percent
24 of the children enrolled in the school are from
25 low-income families; or

1 “(ii) that is designated with a school locale
2 code of 7 or 8, as determined by the Secretary
3 of Education; and

4 “(B) for which there is—

5 “(i) a high percentage of teachers who
6 are not teaching in the academic subject
7 areas or grade levels in which the teachers
8 were trained to teach;

9 “(ii) a high teacher turnover rate; or

10 “(iii) a high percentage of teachers
11 with emergency, provisional, or temporary
12 certification or licenses.

13 “(2) COORDINATION.—The Director shall con-
14 sult with the Secretary of Education in order to de-
15 termine whether a student meets the priority re-
16 quirements of this subsection.

17 “(d) AUTHORIZATION OF APPROPRIATIONS.—There
18 is authorized to be appropriated to carry out this section
19 \$50,000,000 for each of the fiscal years 2007 through
20 2013.

1 **“CHAPTER 3—NATIONAL LABORATORIES**
2 **CENTERS OF EXCELLENCE IN MATHE-**
3 **MATICS AND SCIENCE EDUCATION**

4 **“SEC. 3181. NATIONAL LABORATORIES CENTERS OF EXCEL-**
5 **LENCE IN MATHEMATICS AND SCIENCE EDU-**
6 **CATION.**

7 “(a) IN GENERAL.—The Secretary shall establish at
8 each of the National Laboratories a program to support
9 a Center of Excellence in Mathematics and Science at 1
10 public secondary school located in the region of the Na-
11 tional Laboratory to provide assistance in accordance with
12 subsection (c).

13 “(b) GOALS.—The Secretary shall establish goals and
14 performance assessments for each Center of Excellence
15 authorized under subsection (a).

16 “(c) ASSISTANCE.—Consistent with sections 3165
17 and 3166, the Director shall make available necessary
18 funds for a program using scientific and engineering staff
19 of the National Laboratories, during which the staff—

20 “(1) assists teaching courses at the Centers of
21 Excellence in Mathematics and Science; and

22 “(2) uses National Laboratory scientific equip-
23 ment in the teaching of the courses.

24 “(d) EVALUATION.—The Secretary shall consider the
25 results of the performance assessments required under

1 subsection (b) in any performance review of a National
2 Laboratories management and operations contractor.

3 **“CHAPTER 4—SUMMER INSTITUTES**

4 **“SEC. 3185. SUMMER INSTITUTES.**

5 “(a) DEFINITION OF SUMMER INSTITUTE.—In this
6 section, the term ‘summer institute’ means an institute at
7 a National Laboratory, conducted during the summer,
8 that—

9 “(1) is conducted for a period of not less than
10 2 weeks;

11 “(2) includes, as a component, a program that
12 provides direct interaction between students and fac-
13 ulty; and

14 “(3) provides for follow-up training during the
15 academic year.

16 “(b) SUMMER INSTITUTE PROGRAMS AUTHOR-
17 IZED.—The Secretary, acting through the Director, shall
18 establish or expand program of summer institutes at each
19 of the National Laboratories to provide additional training
20 to strengthen the mathematics and science teaching skills
21 of teachers employed at public schools in kindergarten
22 through grade 12 education, with a particular focus on
23 teachers of kindergarten through grade 8.

1 **“CHAPTER 5—DISTINGUISHED SCIENTIST**
2 **PROGRAM**

3 **“SEC. 3191. DISTINGUISHED SCIENTIST PROGRAM.**

4 “(a) PURPOSE.—The purpose of this section is to
5 promote scientific and academic excellence at National
6 Laboratories.

7 “(b) ESTABLISHMENT.—The Secretary, acting
8 through the Director and in consultation with the Director
9 of the Office of Science, shall establish a program to sup-
10 port the appointment of distinguished scientists by Na-
11 tional Laboratories.

12 “(c) QUALIFICATIONS.—Successful candidates under
13 this section shall be persons who, by reason of professional
14 background and experience, are able to bring international
15 recognition to the appointing National Laboratory in their
16 field of scientific endeavor.

17 “(d) SELECTION.—A distinguished scientist ap-
18 pointed under this section shall be selected through an
19 open peer review process.

20 “(e) APPOINTMENT.—An appointment by a National
21 Laboratory under this section shall be at the rank of the
22 highest grade of distinguished scientist or technical staff
23 of the National Laboratory.

1 “(f) DURATION.—An appointment under this section
2 shall be for 6 years, consisting of 2 3-year funding allot-
3 ments.

4 “(g) USE OF FUNDS.—Funds made available under
5 this section may be used for—

6 “(1) the salary of the distinguished scientist
7 and support staff;

8 “(2) undergraduate, graduate, and post-doc-
9 toral appointments;

10 “(3) research-related equipment;

11 “(4) professional travel; and

12 “(5) such other requirements as the Director
13 determines are necessary to carry out the purpose of
14 the program.

15 “(h) REVIEW.—

16 “(1) IN GENERAL.—The appointment of a dis-
17 tinguished scientist under this section shall be re-
18 viewed at the end of the first 3-year allotment for
19 the distinguished scientist through an open peer re-
20 view process to determine if the appointment is
21 meeting the purpose of this section under subsection
22 (a).

23 “(2) FUNDING.—Funding of the appointment
24 of the distinguished scientist for the second 3-year

1 allotment shall be determined based on the review
2 conducted under paragraph (1).”.

3 **SEC. 503. DEPARTMENT OF ENERGY EARLY CAREER RE-**
4 **SEARCH GRANTS.**

5 (a) PURPOSE.—It is the purpose of this section to
6 authorize research grants in the Department of Energy
7 for early career scientists and engineers for purposes of
8 pursuing independent research.

9 (b) DEFINITION OF ELIGIBLE EARLY CAREER RE-
10 SEARCHER.—In this section, the term “eligible early ca-
11 reer researcher” means an individual who—

12 (1) completed a doctorate or other terminal de-
13 gree not more than 10 years before the date of en-
14 actment of this Act and has demonstrated promise
15 in the field of science, technology, engineering, or
16 mathematics; or

17 (2) has an equivalent professional qualification
18 in the field of science, technology, engineering, or
19 mathematics.

20 (c) GRANT PROGRAM AUTHORIZED.—

21 (1) IN GENERAL.—The Secretary of Energy,
22 through the Director of the Office of Science of the
23 Department of Energy, shall award not less than 65
24 grants per year to outstanding eligible early career
25 researchers to support the work of such researchers

1 in the Department, particularly the National Lab-
2 oratories, or other federally funded research and de-
3 velopment centers.

4 (2) APPLICATION.—An eligible early career re-
5 searcher who desires to receive a grant under this
6 section shall submit to the Secretary of Energy an
7 application at such time, in such manner, and ac-
8 companied by such information as the Secretary may
9 require.

10 (3) SPECIAL CONSIDERATION.—In awarding
11 grants under this section, the Secretary of Energy
12 shall give special consideration to eligible early ca-
13 reer researchers who have followed alternative career
14 paths such as working part time or in nonacademic
15 settings, or who have taken a significant career
16 break or other leave of absence.

17 (4) DURATION AND AMOUNT.—A grant under
18 this section shall be 5 years in duration. An eligible
19 early career researcher who receives a grant under
20 this section shall receive \$100,000 for each year of
21 the grant period.

22 (5) USE OF FUNDS.—An eligible early career
23 researcher who receives a grant under this section
24 shall use the grant funds for basic research in nat-
25 ural sciences, engineering, mathematics, or computer

1 sciences at the Department of Energy, particularly
 2 the National Laboratories, or other federally funded
 3 research and development center.

4 (6) AUTHORIZATION OF APPROPRIATIONS.—

5 There are authorized to be appropriated to carry out
 6 this section—

7 (A) \$6,500,000 for fiscal year 2008;

8 (B) \$13,000,000 for fiscal year 2009;

9 (C) \$19,500,000 for fiscal year 2010;

10 (D) \$26,000,000 for fiscal year 2011; and

11 (E) \$32,500,000 for fiscal year 2012.

12 **SEC. 504. ADVANCED RESEARCH PROJECTS AUTHORITY—**

13 **ENERGY.**

14 (a) DEFINITIONS.—In this section:

15 (1) ARPA-E.—The term “ARPA-E” means
 16 the Advanced Research Projects Authority—Energy
 17 established under subsection (b).

18 (2) FUND.—The term “Fund” means the Ac-
 19 celeration Fund for Research and Development of
 20 Energy Technologies established under subsection
 21 (c).

22 (3) SECRETARY.—The term “Secretary” means
 23 the Secretary of Energy.

24 (4) UNDER SECRETARY.—The term “Under
 25 Secretary” means the position of Under Secretary

1 for Science established under section 202(b) of the
2 Department of Energy Organization Act (42 U.S.C.
3 7132(b)).

4 (b) ARPA-E.—

5 (1) ESTABLISHMENT.—There is established the
6 Advanced Research Projects Authority—Energy.

7 (2) DIRECTOR.—ARPA-E shall be headed by a
8 Director, who shall be appointed by the Secretary
9 and report to the Under Secretary.

10 (3) RESPONSIBILITIES.—The Director shall use
11 the Fund to award competitive, merit-based grants,
12 cooperative agreements, and contracts to public or
13 private entities (including businesses, federally fund-
14 ed research and development centers, and institu-
15 tions of higher education) to—

16 (A) support basic and applied energy re-
17 search to promote revolutionary changes in
18 technologies that would promote the missions of
19 the Department of Energy;

20 (B) advance the development, testing, eval-
21 uation, and deployment of critical energy tech-
22 nologies; and

23 (C) accelerate prototyping and develop-
24 ment of technologies that would address na-
25 tional energy priorities.

1 (4) TARGETED COMPETITIONS.—The Director
2 may solicit proposals to address areas of national
3 need in science and energy technology, as identified
4 by the Director.

5 (5) COORDINATION.—The Director—

6 (A) shall ensure that the activities of
7 ARPA-E are coordinated with activities of
8 other appropriate research agencies; and

9 (B) may carry out projects under this sec-
10 tion jointly with other agencies.

11 (6) PERSONNEL.—

12 (A) IN GENERAL.—In hiring personnel for
13 ARPA-E, the Secretary shall have the hiring
14 and management authorities described in sec-
15 tion 1101 of the Strom Thurmond National De-
16 fense Authorization Act for Fiscal Year 1999
17 (Public Law 105–261; 5 U.S.C. 3104 note).

18 (B) TERM.—The term of appointments for
19 an employee under subparagraph (A) may not
20 exceed 5 years, except that the Secretary may
21 renew the term of appointment of the employee
22 for an additional term of 5 years.

23 (7) DEMONSTRATIONS.—The Director shall pe-
24 riodically hold energy technology demonstrations to

1 improve contact among technology developers, ven-
2 dors, and acquisition personnel.

3 (c) FUND.—

4 (1) ESTABLISHMENT.—There is established in
5 the Treasury of the United States a revolving fund,
6 to be known as the “Acceleration Fund for Research
7 and Development of Energy Technologies”, con-
8 sisting of—

9 (A) such amounts as are appropriated to
10 the Fund under paragraph (5); and

11 (B) any interest earned on investment of
12 amounts in the Fund under paragraph (3).

13 (2) EXPENDITURES FROM FUND.—

14 (A) IN GENERAL.—Subject to subpara-
15 graph (B), on request by the Director, the Sec-
16 retary of the Treasury shall transfer from the
17 Fund to the Director such amounts as the Di-
18 rector determines are necessary to carry out
19 this section.

20 (B) ADMINISTRATIVE EXPENSES.—An
21 amount not exceeding 5 percent of the amounts
22 in the Fund shall be available for each fiscal
23 year to pay the administrative expenses nec-
24 essary to carry out this section.

25 (3) INVESTMENT OF AMOUNTS.—

1 (A) IN GENERAL.—The Secretary of the
2 Treasury shall invest such portion of the Fund
3 as is not, in the judgment of the Secretary of
4 the Treasury, required to meet current with-
5 drawals.

6 (B) INTEREST-BEARING OBLIGATIONS.—
7 Investments may be made only in interest-bear-
8 ing obligations of the United States.

9 (C) ACQUISITION OF OBLIGATIONS.—For
10 the purpose of investments under subparagraph
11 (A), obligations may be acquired—

12 (i) on original issue at the issue price;

13 or

14 (ii) by purchase of outstanding obliga-
15 tions at the market price.

16 (D) SALE OF OBLIGATIONS.—Any obliga-
17 tion acquired by the Fund may be sold by the
18 Secretary of the Treasury at the market price.

19 (E) CREDITS TO FUND.—The interest on,
20 and the proceeds from the sale or redemption
21 of, any obligations held in the Fund shall be
22 credited to, and form a part of, the Fund.

23 (4) TRANSFERS OF AMOUNTS.—

24 (A) IN GENERAL.—The amounts required
25 to be transferred to the Fund under this sub-

section shall be transferred at least monthly from the general fund of the Treasury to the Fund on the basis of estimates made by the Secretary of the Treasury.

(B) ADJUSTMENTS.—Proper adjustment shall be made in amounts subsequently transferred to the extent prior estimates were in excess of or less than the amounts required to be transferred.

(5) AUTHORIZATION OF APPROPRIATIONS.—

There are authorized to be appropriated to the Fund—

(A) \$300,000,000 for fiscal year 2008;

(B) \$500,000,000 for fiscal year 2009;

(C) \$700,000,000 for fiscal year 2010;

(D) \$900,000,000 for fiscal year 2011;

and

(E) \$1,000,000,000 for fiscal year 2012.

TITLE VI—INCREASING FEDERAL PUBLIC TRANSIT FUNDING AND EFFICIENCY INCENTIVES

SEC. 601. TRANSIT-ORIENTED DEVELOPMENT CORRIDORS.

(a) IN GENERAL.—In consultation with State transportation departments and metropolitan planning organi-

1 zations, the Secretary of Transportation shall designate,
2 in urbanized areas, at least 20 transit-oriented develop-
3 ment corridors by 2015 and 50 transit-oriented develop-
4 ment corridors by 2025.

5 (b) TRANSIT GRANTS.—The Secretary shall award
6 grants to a State or local governmental authority to carry
7 out projects to construct or improve transit facilities, bicy-
8 cle transportation facilities, and pedestrian walkways in
9 a transit-oriented development corridor, including capital
10 projects.

11 (c) RESEARCH AND DEVELOPMENT.—In order to
12 support effective deployment of grants and incentives
13 under this section, the Secretary shall establish a transit-
14 oriented development corridors research and development
15 program for the conduct of research on best practices and
16 performance criteria for transit-oriented development cor-
17 ridors.

18 (d) LABOR STANDARDS.—The Secretary shall not
19 award a grant to a State or local governmental authority
20 for a project under this section unless the Secretary re-
21 ceives reasonable assurances from the State or local gov-
22 ernmental authority that laborers and mechanics em-
23 ployed by contractors and subcontractors in the perform-
24 ance of construction or improvement for the project will
25 be paid wages not less than those prevailing on similar

1 construction or improvement in the locality as determined
2 by the Secretary of Labor under sections 3141 through
3 3144, 3146, and 3147 of title 40.

4 (e) AUTHORIZATION OF APPROPRIATIONS.—There
5 are authorized to be appropriated to carry out this section
6 \$500,000,000 for each of fiscal years 2008 through 2017,
7 of which \$2,000,000 per fiscal year are authorized for the
8 research and development program under subsection (c).

9 (f) DEFINITIONS.—In this section, the following defi-
10 nitions apply:

11 (1) DEFINITIONS FROM TITLE 49, UNITED
12 STATES CODE.—The terms “capital project”, “local
13 governmental authority”, “mass transportation”,
14 and “urbanized area” have the meanings such terms
15 have under section 5302 of title 49, United States
16 Code.

17 (2) STATE.—The term “State” means a State
18 of the United States, the District of Columbia, Puer-
19 to Rico, the Northern Mariana Islands, Guam,
20 American Samoa, and the United States Virgin Is-
21 lands.

22 (3) TRANSIT-ORIENTED DEVELOPMENT COR-
23 RIDOR.—The term “transit-oriented development
24 corridor” means rights-of-way for fixed-guideway
25 mass transportation facilities, including commercial

1 development that is connected with any such facility
2 physically and functionally.

3 **SEC. 602. WEATHERIZATION ASSISTANCE.**

4 Section 422 of the Energy Conservation and Produc-
5 tion Act (42 U.S.C. 6872) is amended—

6 (1) by striking “\$500,000,000 for fiscal year
7 2006” and inserting “\$1,000,000,000 for fiscal year
8 2008”;

9 (2) by striking “\$600,000,000 for fiscal year
10 2007” and inserting “\$1,200,000,000 for fiscal year
11 2009”; and

12 (3) by striking “\$700,000,000 for fiscal year
13 2008” and inserting “\$1,400,000,000 for fiscal year
14 2010”.

15 **SEC. 603. FEDERAL SUPPORT FOR COMMERCIALIZATION**
16 **OF NEW TECHNOLOGIES.**

17 (a) PROGRAM.—The Secretary of Energy shall estab-
18 lish a program of support, through grants, low-interest
19 loans, and loan guarantees, for the commercialization, in-
20 cluding support for pilot projects, of new—

21 (1) renewable energy technologies;

22 (2) technologies for energy generation from fos-
23 sil fuels that incorporate carbon sequestration; and

24 (3) energy efficiency technologies.

1 (b) AUTHORIZATION OF APPROPRIATIONS.—There
 2 are authorized to be appropriated to the Secretary of En-
 3 ergy for carrying out this section \$5,000,000,000.

4 **SEC. 604. TELECOMMUTING TAX CREDIT.**

5 (a) IN GENERAL.—Subpart D of part IV of sub-
 6 chapter A of chapter 1 of the Internal Revenue Code of
 7 1986 (relating to business related credits) is amended by
 8 adding at the end the following new section:

9 **“SEC. 45N. TELECOMMUTING CREDIT.**

10 “(a) DETERMINATION OF AMOUNT.—For purposes of
 11 section 38, the amount of the telecommuting credit deter-
 12 mined under this section for the taxable year shall be
 13 equal to 40 percent of the qualified first-year wages for
 14 such year.

15 “(b) QUALIFIED FIRST-YEAR WAGES.—For purposes
 16 of this section—

17 “(1) IN GENERAL.—The term ‘qualified first-
 18 year wages’ means, with respect to any individual,
 19 qualified wages attributable to service rendered dur-
 20 ing the 1-year period beginning with the day the in-
 21 dividual begins work for the employer.

22 “(2) QUALIFIED WAGES.—The term ‘qualified
 23 wages’ means the wages paid or incurred by the em-
 24 ployer during the taxable year to qualified telecom-
 25 muters.

1 “(3) ONLY FIRST \$6,000 OF WAGES PER YEAR
2 TAKEN INTO ACCOUNT.—The amount of the quali-
3 fied first-year wages which may be taken into ac-
4 count with respect to any individual shall not exceed
5 \$6,000 per year.

6 “(c) QUALIFIED TELECOMMUTER.—For purposes of
7 this section, the term ‘qualified telecommuter’ means any
8 individual who renders not less than 40 percent of the
9 service described in subsection (b)(1) from the individual’s
10 principal residence.

11 “(d) WAGES.—For purposes of this section—

12 “(1) IN GENERAL.—The term ‘wages’ has the
13 meaning given to such term by subsection (b) of sec-
14 tion 3306 (determined without regard to any dollar
15 limitation contained in such section).

16 “(2) ON-THE-JOB TRAINING AND WORK SUP-
17 PLEMENTATION PAYMENTS.—

18 “(A) EXCLUSION FOR EMPLOYERS RECEIV-
19 ING ON-THE-JOB TRAINING PAYMENTS.—The
20 term ‘wages’ shall not include any amounts
21 paid or incurred by an employer for any period
22 to any individual for whom the employer re-
23 ceives federally funded payments for on-the-job
24 training of such individual for such period.

1 “(B) REDUCTION FOR WORK SUPPLEMEN-
 2 TATION PAYMENTS TO EMPLOYERS.—The
 3 amount of wages which would (but for this sub-
 4 paragraph) be qualified wages under this sec-
 5 tion for an employer with respect to an indi-
 6 vidual for a taxable year shall be reduced by an
 7 amount equal to the amount of the payments
 8 made to such employer (however utilized by
 9 such employer) with respect to such individual
 10 for such taxable year under a program estab-
 11 lished under section 482(e) of the Social Secu-
 12 rity Act.

13 “(e) SPECIAL RULES.—For purposes of this section,
 14 rules similar to the rules of section 52 and subsections
 15 (f), (g), (i), (j), and (k) of section 51 shall apply.”.

16 (b) CREDIT TREATED AS BUSINESS CREDIT.—Sec-
 17 tion 38(b) of such Code is amended by striking “and” at
 18 the end of paragraph (29), by striking the period at the
 19 end of paragraph (30) and inserting “, and”, and by add-
 20 ing at the end the following new paragraph:

21 “(31) the telecommuting credit determined
 22 under section 45N(a).”.

23 (c) CLERICAL AMENDMENT.—The table of sections
 24 for subpart D of part IV of subchapter A of chapter 1

1 of such Code is amended by adding at the end the fol-
2 lowing new item:

“Sec. 45N. Telecommuting credit.”.

3 (d) EFFECTIVE DATE.—The amendments made by
4 this section shall apply to taxable years beginning after
5 December 31, 2006.

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